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# Cumulants of the quark number fluctuations from LQCD at imaginary potentials

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I present a determination of the cumulants of the quark number fluctuations, obtained via analytic continuation of Nf=2+1 physical quark mass lattice QCD simulations at imaginary chemical potentials. We employ stout improved staggered fermions and tree level Symanzik gauge action, exploring temperatures ranging from 135 up to 350 MeV, adopting mostly lattices with Nt=8 sites in the temporal direction.
We show that below Tc the method can be strongly advantageous, with respect to a direct Montecarlo sampling at μ=0.
We discuss the radius of convergence of the Taylor expansion and the possible location of the second order critical point at real potential. No evidence for such a point is found in the explored range of temperature, within present determinations of the pseudo-critical line.

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